



5 April, 2007

John Carlson, Executive Director
California Fish & Game Commission
1416 Ninth Street
Sacramento, CA 94244-2090

RE: ISOR and EIR for Central Coast MLPA Initiative

Dear Mr. Carlson:

We are writing in regards to the Initial Statement of Reasons (ISOR) for Regulatory Action and final Environmental Impact Report (EIR) for the Central Coast Marine Life Protection Act Initiative. First, we would like to commend the Department and Commission on the effort and accomplishments of the Central Coast Marine Protected Area (MPA) Project thus far. While we applaud the intent to manage our oceans more sustainably, there are still several serious issues we feel need to be addressed.

ISOR - Per the letter released by the Commission on 23 January 2007, we feel that regulatory change 3 made to the ISOR (further defining species groups such as finfish) is important to make the document stronger, yet changes 1 and 2 (allowing additional take within reserves) serve only to weaken protections offered by the 15 August 2006 preferred alternative, and threaten to undermine scientific integrity of the MPA network.

The ISOR provides no analysis on the impact of these substantial changes on the effectiveness of proposed protected areas in meeting the goals of the MLPA (specifically Goals 1 & 5, Objectives 1.4, 1.5, 5.3). For example, regarding the proposed Año Nuevo SMR, reduction to SMCA status is a significant change. Giant kelp (*Macrocystis pyrifera*) provides sanctuary for many marine species, including rockfish, sea otters and many seabirds, particularly nearshore species such as Pelagic and Brandt's Cormorant, Pigeon Guillemot, endangered Marbled Murrelet and Brown Pelican. Specifically, all of these occur within the proposed Año Nuevo State Marine Reserve (SMR) and most breed either within proposed SMR boundaries or nearby. However, certain species, such as the endangered Marbled Murrelet, do not occur in any other location considered in the Central Coast Project. Due to restricted ranges during breeding, many species rely on kelp beds for protection and/or foraging opportunities. Seabird foraging flocks are often observed in the kelp beds in Año Nuevo Bay, and Marbled Murrelet, Brandt's Cormorant and Pigeon Guillemot diet includes juvenile rockfish that have settled into kelp beds (e.g., gopher rockfish, etc.), among other kelp-inhabiting species (PRBO unpublished data, Ainley et al. 1981, Becker & Beissinger 2003). Having to forage farther from breeding colonies results in additional effort by parents, increased intervals between offspring feedings and often reduced breeding success. Such stresses are aggravated by El Niño events which are common in the highly variable California Current system.



For example, one of the primary foraging areas for Marbled Murrelets breeding up the Waddell Creek watershed is Año Nuevo Bay, with foraging ranges averaging only 6.5 ± 5.3 km from inland nests during productive ocean conditions to 12.7 ± 9.2 km in poor conditions during which the birds may not have been able to breed and actually abandoned nests (Becker & Beissinger 2003). Healthy predator and prey populations are better able to withstand climate perturbations, yet compromising kelp beds and foraging opportunities for predators and their offspring within the proposed Año Nuevo SMR will not contribute to sustaining healthy populations.

The revised ISOR creates two options for the Año Nuevo MPA. **We support Option 1, which is consistent with the October 17, 2006 proposed regulations, and calls for a fully protected SMR at Año Nuevo.** We understand that there is an existing lease to hand harvest kelp in this area but that harvesting has not yet occurred under this lease. We support allowing this lease to run through its full term and sunset on expiration.

Furthermore, changes to prohibit squid and other forage fishing within MPAs -an extremely important issue to maintain or increase protections- was not addressed in these ISOR changes, despite extensive previous scientific and public comment. Indeed, the opposite has actually occurred, in that the document states that “an allowance for minor incidental catch that is almost certain to occur in the course of commercial squid fishing has been added to SMCAs which allow the take of squid...” Not only is fishing for squid and other forage species likely to have significant and cumulative negative environmental impacts throughout the marine food web, but incidental catch increases negative impacts. Given the importance of squid as a forage resource for both commercially and non-commercially valuable predators, **we strongly recommend removing provisions to allow market squid fishing in the Greyhound Rock State Marine Conservation Area (SMCA).**

EIR - Despite statements in the final EIR that the Proposed Project “neither increases the overall take of market squid, nor does it provide decreased protection for seabirds and marine mammals” and furthermore “does not propose any actions that would... result in reductions in .. habitat or forage base” to predators, we would like to point out otherwise.

First of all, **squid are not always “abundant throughout the study region”** as stated in the EIR, since squid abundance often responds negatively to warm-water events, and squid are patchily (not evenly) distributed (see Lowry & Caretta 1999, Ish et al. 2004, Zeidberg et al. 2006). The Greyhound Rock area is favored by fishers (and likely by predators as well) for its denser aggregations of squid versus other nearby localities.

Secondly, while squid are indeed managed under the Department’s Market Squid Fishery Management Plan (FMP) as stated in the EIR, **data used for this plan were from ‘boom’ years 1999-2002 and excluded the major ENSO event of 1997-1998 when squid populations were reduced. The fishery control rules do not incorporate environmental variation into harvest**



quotas and based on the response of squid abundance to warm-water events, could result in over-harvesting during years of poor marine conditions, adding pressure to already-stressed predators during this difficult time.

Thirdly, while the Proposed Project may not increase the overall take of squid, it will likely result in the redistribution of squid fishers and may increase take disproportionately in some areas, particularly near key breeding colonies where predators have restricted ranges. Thus it is very likely there will be significant impacts that were not recognized in the EIR. These involve decreased protection of forage habitat and opportunities for predators due to direct competition as well as increased disturbance while foraging. Some impacts may occur in the near future, while cumulative impacts may take several years to measure. Specifically, squid fishers that used the Año Nuevo area or other areas further south may redistribute themselves, concentrating just outside SMR boundaries (e.g. to take advantage of “spillover”) and/or more heavily tax hotspots that will potentially continue to allow squid fishing (e.g. Greyhound Rock SMCA). Redistribution of squid fishers in particular is highly probable, given that few of them are California residents tied to any one locale.

Moreover, even though the EIR states that “data are not available linking fishing for squid to the type of food web impacts” we discuss, evidence of environmental influence and predator reliance on different forage species is becoming increasingly available as new analyses are being conducted. For example, according to recent PRBO models, Common Murres can consume >58,000 metric tons/yr of squid in the California region (between Cape Blanco and Pt Conception, not even including the productive waters of the Southern California Bight). **This is only one predator species but estimates of squid take are higher than the fishery catch in some years.** Additional predators include but are not limited to: Brandt’s Cormorants (14% squid in winter diet Monterey Bay, Baltz and Morejohn 1977; >10% squid in diet year round at Año Nuevo, PRBO unpublished data), Rhinoceros Auklets (up to 27% squid in breeding season diet at Año Nuevo and up to 17% at the Farallon Islands, Thayer & Sydeman 2007, Thayer et al. in review), California Sea Lions (~10% squid in fall-winter diet at Año Nuevo, Weise & Harvey 2005), etc. Predators may rely increasingly on squid when other prey are scarce, such as during ENSO or other warm/poor marine conditions (e.g. the highest proportion of squid was observed at Año Nuevo in Rhinoceros Auklet diet in 1997 and in Brandt’s Cormorant diet in 2005), thus increasing competition with the squid fishery. Forage species in central California are a less diverse group (fewer species types) than the predators they support. Absence or dearth of even one or a few types of forage species may translate into reproductive failure or mortality for predators. Even if data are not yet available for every predator, **it does not follow that a precautionary approach be dismissed, especially in light the importance of squid prey to predators, climate change – including dramatic but poorly-understood fluctuations off the California coast in the past 3 years, and the response of squid abundance to warm-water events.**



Overall, these are key points that demonstrate the importance of specific foraging areas (i.e., Greyhound Rock and Año Nuevo) in the vicinity of major predator breeding colonies. Thus, despite the claim in the EIR that “there are many MPAs in the proposal that provide for full no-take ecosystem protection in areas where market squid are found,” these other areas are not necessarily near important predator breeding or foraging areas, and thus do not afford adequate protection for many species under consideration.

The proposed reduction of the Año Nuevo SMR to SMCA status, in addition to allowing squid fishing and incidental take within the Greyhound Rock SMCA, have the potential to significantly compromise protections to the marine community, particularly predatory fishes, birds and mammals in this upwelling and biodiversity hotspot. Existing legislation such as the Migratory Bird Treaty Act and the Marine Mammal Protection Act does nothing to protect the forage base for upper trophic predators. Squid is an important forage resource, and in addition to issues discussed above, the Market Squid Fishery Management Plan (FMP) neglected to take into account the needs of seabirds and marine mammals in the Año Nuevo and Greyhound Rock areas. However, both the Marine Life Management Act and Magnuson-Stevens Act specify that the needs of ecologically dependent species must be taken into account when setting fishery quotas and implementing other regulatory actions. Thus, the MLPA process is an appropriate arena to address and provide for these needs. The final EIR (p.52) states that “reserve” status will protect species that occur within its boundaries. Yet this would not be the case for forage species and predators if Año Nuevo SMR is reduced to SMCA status and squid fishing is allowed in the Greyhound Rock SMCA. Additionally, statements on p.171 concur that impacts from changes proposed in the revised ISOR would be minimal; we disagree and suggest that impacts are likely to be significant. **We support Option 1, which is consistent with the 17 October 2006 proposed regulations and calls for a fully protected SMR at Año Nuevo. Furthermore, we do not support take of squid and incidental bycatch in Greyhound Rock SMCA,** given that most marine birds and mammals which breed in the vicinity of Año Nuevo (*and are thus restricted in their foraging range due to the need to continually return to care for young*) consume squid as an important part of their diet.

In summary,

- **Marine ecosystem health relies on protection of the forage base for the marine food web, of which kelp-canopy species and market squid are a major part**
- **Año Nuevo and Greyhound Rock areas both harbor significant aggregations of forage species and provide important foraging opportunities for predatory fishes, birds and mammals, especially those with restricted ranges**
- **Food webs are not protected under existing legislation, necessitating protection under the MLPA**
- **Kelp harvesting and market squid fishing would likely result in or exacerbate significant negative ecosystem impacts and thus we strongly recommend retaining SMR status for the Año Nuevo MPA and prohibiting market squid fishing in the Greyhound Rock SMCA**



We urge the Department and the Commission to fully consider all the scientific input to this process and the interplay of different forms of available management on the ecosystem as a whole. Thank you very much for the opportunity to comment, and please feel free to contact me with any questions.

Sincerely,

Julie A. Thayer
Marine Ecologist
707-781-2555, x317
jthayer@prbo.org

Cc: FGC members

Literature cited:

- Ainley, D.G., et al. (1981) Feeding ecology of marine cormorants in Southwestern North America. *Condor* 83:120-131
- Baltz, D.M. and G.V. Morejohn (1977) Food habits and niche overlap of sea birds wintering on Monterey Bay, California. *Auk* 94(3):526-543
- Becker, B.H. and S.R. Beissinger (2003) Scale-dependent habitat selection by a nearshore seabird, the marbled murrelet, in a highly dynamic upwelling system. *Marine Ecology Progress Series* 256:243-255
- Ish, T., et al. (2004) Environment, krill and squid in the Monterey Bay: From fisheries to life histories and back again. *Deep-Sea Research II* 51:849-862
- Lowry, M. (1999) Market Squid (*Loligo opalescens*) in the diet of California sea lions (*Zalophus californianus*) in southern California (1981-1995). *CalCOFI Rep* 40:196-207
- Thayer, J.A., et al. (In review) Forage fish around the North Pacific as revealed by diet of a piscivorous seabird: synchrony and relationships with ocean climate. *Can J Fish Aquat Sci*
- Thayer, J.A. and W.J. Sydeman (2007) Spatio-temporal variability in prey harvest and reproductive ecology of a piscivorous seabird, *Cerorhinca monocerata*, in an upwelling system. *Mar Ecol Prog Ser* 329:253-265
- Weise, M. J. and J. T. Harvey (2005). California sea lion (*Zalophus californianus*) impacts on salmonids near Año Nuevo Island, California. Final Report NOAA Contract # 40ABNF101432. Santa Cruz, California: 31p.
- Zeidberg, L.D., et al. (2006) The fishery for California market squid (*Loligo opalescens*) (Cephalopoda: Myopsida) from 1981 through 2003. *Fisheries Bulletin* 104:46-59